

ABSTRACT

A composite oxide having oxygen absorbing and desorbing capability containing 90 to 100 weight % total of cerium, zirconium, and hafnium based on a total amount 5 of metals contained in the composite oxide, the total amount of cerium, zirconium, and hafnium consisting of 14.0 to 70.5 at% cerium, 29.49 to 72.5 at% zirconium, and 0.01 to 13.5 at% hafnium, wherein degree of solid solution of the composite oxide is not lower than 70 %, 10 and wherein the composite oxide has reducing property that not less than 90 % of tetravalent cerium contained in the composite oxide is reduced into trivalent cerium when the composite oxide is held at 600°C under a reducing atmosphere; and a method for preparing the composite 15 oxide including the steps of preparing a composite salt from a starting material solution wherein 85 weight % or more of the cerium ions are Ce⁴⁺ by coprecipitation, and subjecting the resulting precipitate to a particular calcining steps including reducing calcination.